Hecla
MINING COMPANY

April 15, 2005

Sent via U.S. Mail

Eric Johnson
U.S. Environmental Protection Agency
Region 8, 8ENF-T
999 18th Street, Suite 300
Denver, Colorado 80202-2466

RE: Progress report for March 2005 activities - Hecla Mining Company Apex Site (EPA ID No. UT982589848, Docket No. RCRA-8-99-06)

Dear Mr. Johnson:

Per paragraph 64 of the Order, enclosed is a copy of the March 2005 progress report for your records.

If you have any questions please do not hesitate to call me at (208) 769-4135 or e-mail at cgypton@hecla-mining.com.

Sincerely,

Chris Gypton
Project Manager

Encl

Cc: John Galbavy, Esq. (HMC) (w/o attachments)
John Jacus, Esq. (DG&S)

UT89848
03-30

Hecla
MINING COMPANY

April 15, 2005

Sent via U.S. Mail

Glenn Rogers, Chairman.
Shivwits Band of Paiute Indian Tribe
P.O. Box 448
Santa Clara, Utah 84765

John Krause
Bureau of Indian Affairs Phoenix Area Office
U.S. Department of Interior
P.O. Box 10
Phoenix, AZ 85001

Deborah Hamlin
BIA Southern Paiute Field Station, Branch of Natural Resources
P.O. Box 720
St. George, UT 84771

RE: Progress report for March 2005 activities - Hecla Mining Company Apex Site (EPA ID No. UT982589848, Docket No. RCRA-8-99-06)

Dear Chairman Rogers, Mr. Krause and Ms. Hamlin:

Per paragraph 64 of the Order, enclosed is a copy of the March 2005 progress report for your records.

If you have any questions please do not hesitate to call me at (208) 769-4135 or e-mail at cgypton@hecla-mining.com.

Sincerely,

Chris Gypton
Project Manager

Encl

Cc: John Galbavy, Esq. (HMC) (w/o attachments)
John Jacus, Esq. (DG&S) (w/o attachments)
Eric Johnson (USEPA, Region VIII) (w/o attachments)

6500 Mineral Drive • Suite 200 • Coeur d'Alene, Idaho 83815-9408 • 208/769-4100 • FAX 208/769-4107 • www.hecla-mining.com

U89848
03-30

Hecla
MINING COMPANY

April 15, 2005

MEMORANDUM TO: Paul Glader

COPIES TO: file, distribution

FROM: Chris Gypton

SUBJECT: **Progress Report No. 11 for period ending March 31, 2005; Pond 2 Final Closure - Apex Site, Washington County, Utah**

Summary

Abnormal precipitation continued intermittently throughout the month of March, but did not materially impact the work. Weather conditions appear to be trending back towards average.

Site activities in the month focused on tailings dewatering and managing the seepage collection system. The seepage rate has declined to a point where pumping out the collection system ponds is done every third day on average. The following table summarizes estimated volume of water removed through the dewatering system:

Time Period - 2005	Gallons in Period	Cumulative Gallons
Feb. 18 through Feb 28	28,650	28,650
March 1 through 31	103,415	132,065

Forced evaporation may allow the dewatering rate to be increased. A test system will be set up at one of the evaporation basins and operated in April. This system will be expanded if we determine there is a measurable benefit. Discussion of the forced evaporation system is included in the Supplemental Attachments at the end of the report.

Doug Gibbs, P.E. (closure plan design engineer) reviewed the gas sampling and analysis data and determined the incorporation of gas venting into the final cover design would not be necessary. The technical memorandum is included in the Supplemental Attachments.

The revised schedule assumed that management of the seepage collection system would be the main activity through March 2005, with pumping out of the dewatering sumps done if conditions for evaporating this water appeared favorable. To date the project has generally proceeded according to this plan. The winter wet season typically ends in late March to early April, so we plan to focus primarily on dewatering, starting in April 2005. The water level in the old seepage collection ponds will be kept as low as possible in any case. Based on our observations of the evaporation rate in summer 2004, it is reasonable to set the target start of the final cover construction in late June 2005.

Major Issues

1. None

Work Planned for Next Period

1. Continue management of the existing seepage collection system. Water collected in the system will be periodically pumped back to the impoundment and allowed to evaporate. The inventory of water in the seepage collection system will be kept to a practical minimum.
2. Continue dewatering of the tailings.
3. Set up and test forced evaporation system.

Work in Process

Procure Outside Services

1. No activity

Procure Materials

1. Purchase and fabrication of forced evaporation test system.

Contractor Submittals

1. No activity

Seepage Collection System Maintenance

1. Seepage collection system was maintained concurrently with the dewatering activity.

Phase II Drain/Evaporate Excess Water

1. Personnel were on site a total of thirty-one days in the month. Approximately 103,000 gallons of water was pumped out of the dewatering sumps, and transferred to the evaporation basins.

Sampling and Analysis in Period

Material Characterization

1. No activity

Field Tests, Inspections & QA/QC

1. No activity

Cost and Schedule

Committed costs in March 2005 were approximately $14,000. All of the expenditures were related to tailings dewatering and seepage collection system management. The prior month's committed cost of $462,000 was over estimated. Total project to date committed is approximately $469,000. Forecast cost at completion is now expected to be $1,114,000. The increase, as compared to the prior month's forecast cost at completion, is due to expected impact from fuel price increases and the additional cost to remove the evaporation basins constructed in January/February

The cost report for March is attached. Current status of the deliverables listed in the RCRA 7003 order is as follows:

Deliverable	Reference Paragraph	Due	Remarks
Post warning signage around perimeter of site	57	**15 days after effective date of order**	Work completed on March 9, 2004
Begin implementation of closure plan	63	**45 days after receipt of filing of order**	Work started on February 23, 2004
Monthly progress reports	64	**28th day after close of month**	Requirement in effect after order is filed.
Completion report	65	**30 days after completion of all closure plan tasks**	To be submitted within 30 days after work has been physically completed and all contracts closed out.

The update of the schedule milestones is on the following table:

Milestone	Target	Actual	Remarks
Issue bid package – Phase I (Sump Drains)	6/14/04	***6/15/04***	Portion of RFP materials issued at pre-bid on 6/14/04; remainder sent via courier
Issue RFP package – Phase III	6/24/04	***6/24/04***	
Award contract for Phase I	6/24/04	***6/29/04***	Date contract was shipped to Hughes
Pre-bid meeting – Phase III	7/19/04	***7/19/04***	
Start Phase I (Sump Drains) construction	7/12/04	***7/19/04***	
Start Phase II (Evaporation)	7/19/04	***7/29/04***	
Receive bids for Phase III	8/2/04	***8/2/04***	
Re-bid Phase III contract package	April 2005		
Start Phase III construction	June 2005		Revised target based on dewatering progress
Complete Phase III construction	August 2005		Revised target based on late PH III start

Supplemental Attachments

1. Forced evaporation system description, parts list and operation, 3 pages; Gila Management, March 2005.

2. "Preliminary Assessment of Gas Collection and Sampling – Apex Site"; technical memorandum by Doug Gibbs, P.E., Monster Engineering, Inc. March 8, 2005

Hecla Mining Company

Apex Site
Pond 2 Final Closure
Project Cost Report

Date Printed:4/15/2005

Activity	2004 Budget	Revised Budget May 2004	Committed Cost this Period	Cumulative Committed Cost To Date 3-31-05	Forecasted Cost To Complete	Forecasted Final Cost	Remarks on Forecast to Complete
Phase I - Drain Excess Liquid From Tailings							
Test wick program - Nilex		35,000		35,000	0	35,000	
Earthwork during wick test program		2,000		1,768	0	1,768	
Install drainage piping and sumps:							
Contractor mobilization/demobilization		5,500		5,500	0	5,500	
Install sumps - material & labor		20,000		24,500	0	24,500	
Build surface evaporation ponds		2,700		838	0	838	
Remove existing evaporaton ponds		2,000		0	0	0	Work moved to Phase III
Bury existing pond material & regrade		2,000		0	0	0	Work moved to Phase III
Survey monuments		3,500		1,160	500	1,660	One trip plus final report
Subtotal Phase I	**189,200**	**72,700**		**68,766**	**500**	**69,266**	
Phase II - Evaporate Excess Liquid							
Operate evaporation & pumping system		8,000		9,585		9,585	FY 2004 work only
Test pits to determine dewatering progress				1,320		1,320	
Upgrade evaporation cells & collection sumps				132,114		132,114	
Dewatering & seepage collection management			6,169	25,764	35,000	60,764	T&M labor + equipment; February '05 through June '05
Subtotal Phase II	**6,000**	**8,000**	**6,169**	**168,783**	**35,000**	**203,783**	
Phase III - Regrading & Final Cover System							
Contractor mobilization/demobilization		20,000		4,426	76,300	80,726	Includes allowance for cost escalation from FY 2004
Excavate existing embankment		15,000		0	46,000	46,000	
Final grading of 1% surface		2,500		0	56,000	56,000	
Place barrier layer (GCL) - top		200,000		0	150,000	150,000	
Place barrier layer (GCL) - outslopes		50,000		0	0	0	Incl w/ GCL cover cost
Excavate diversion channel		9,100		0	37,000	37,000	
Place 12" protection layer on top surface		19,000		0	45,000	45,000	
Reconstruct outside embankment		7,350		0	0	0	Incl w/ excavation of existing embankment
Finish grade 1% surface - top		3,000		0	0	0	Incl w/ 12" protection layer
Place surface layer at outslopes (D50 = 1")		4,800		0	0	0	Incl w/ 12" protection layer
Recontour diversion channel for drainage		2,000		0	0	0	Incl w/ diversion channel exc
Place diversion channel erosion protection (3" rock)		3,800		0	0	0	Incl w/ diversion channel exc
Surveying - diversion channel drainage		2,500		0	0	0	Incl w/ diversion channel exc
Remove existing evaporation ponds		0		0	34,200	34,200	
Clear site for construction		3,000		0	3,000	3,000	
Performance & Payment Bond		0		0	4,500	4,500	
Subtotal Phase III	**337,000**	**342,050**	**0**	**4,426**	**452,000**	**456,426**	
Field Indirect Costs							
Construction Management labor		108,360	4,445	145,031	76,500	221,531	
Construction Management field expenses		38,575	1,024	31,652	20,400	52,052	
Field office trailer		6,525	165	2,168	1,490	3,658	
CQA testing		9,200		0	17,100	17,100	
CQA completion report		5,000		0	5,000	5,000	
Survey and layout		2,208		0	2,200	2,200	
Material classification tests		1,500		5,762	2,500	8,262	
Consulting Engineer		42,200	749	31,699	15,850	47,549	
Subtotal Consultants	**184,500**	**213,568**	**6,383**	**216,311**	**141,040**	**357,351**	
Hecla Costs							
Labor	15,500	15,500	1,071	9,996	12,000	21,996	
Travel expenses	3,200	3,200		969	4,600	5,569	
Subtotal Hecla Costs	**18,700**	**18,700**	**1,071**	**10,965**	**16,600**	**27,565**	
Total Pond 2 Final Closure	**715,400**	**655,018**	**13,623**	**469,250**	**645,140**	**1,114,390**	

Prepared By: Hecla Mining + Gila Management, LLC

Apex Pond 2 – Forced Evaporation System Operation Instructions

System Equipment:

Qty.	Equipment	Model	Description
1	Honda Submersible Pump	WSP100AA	1 HP electric, 140 GPM Cap.
1	Generator	5500 W	10 HP gasoline powered
4	2" Medium grade hose	50 Ft.	with PVC cam lock fittings
1	2" FRP Cam Lock fitting	-	female end
1	2" to 1 ½" Bushing	Sch. 40	PVC
1	1 ½" Pipe x 10' lg.	Sch. 40	PVC
9	1 ½" Pipe x 5' lg.	Sch. 40	PVC
10	1 ½" x 1 ½" x 1" Tee	Sch. 40	PVC
10	1 ½" x 1" Bushing	Sch. 40	PVC
20	½" pipe nipples (T.O.E.)	Sch. 40	PVC
10	½" N.C. Lasco ball valves	19-6506	PVC
10	2 ½" Rainbird spray nozzle	SP25H	90 deg. 1 GPM at 30 PSI
5	landscape stakes	-	PVC for 1 ½" pipe

System Operating Data:

The system will atomize approximately 10 gallons per minute x 4 hours per day x 5 days per week or 12,000 gallons of liquid per week.

System Operation:

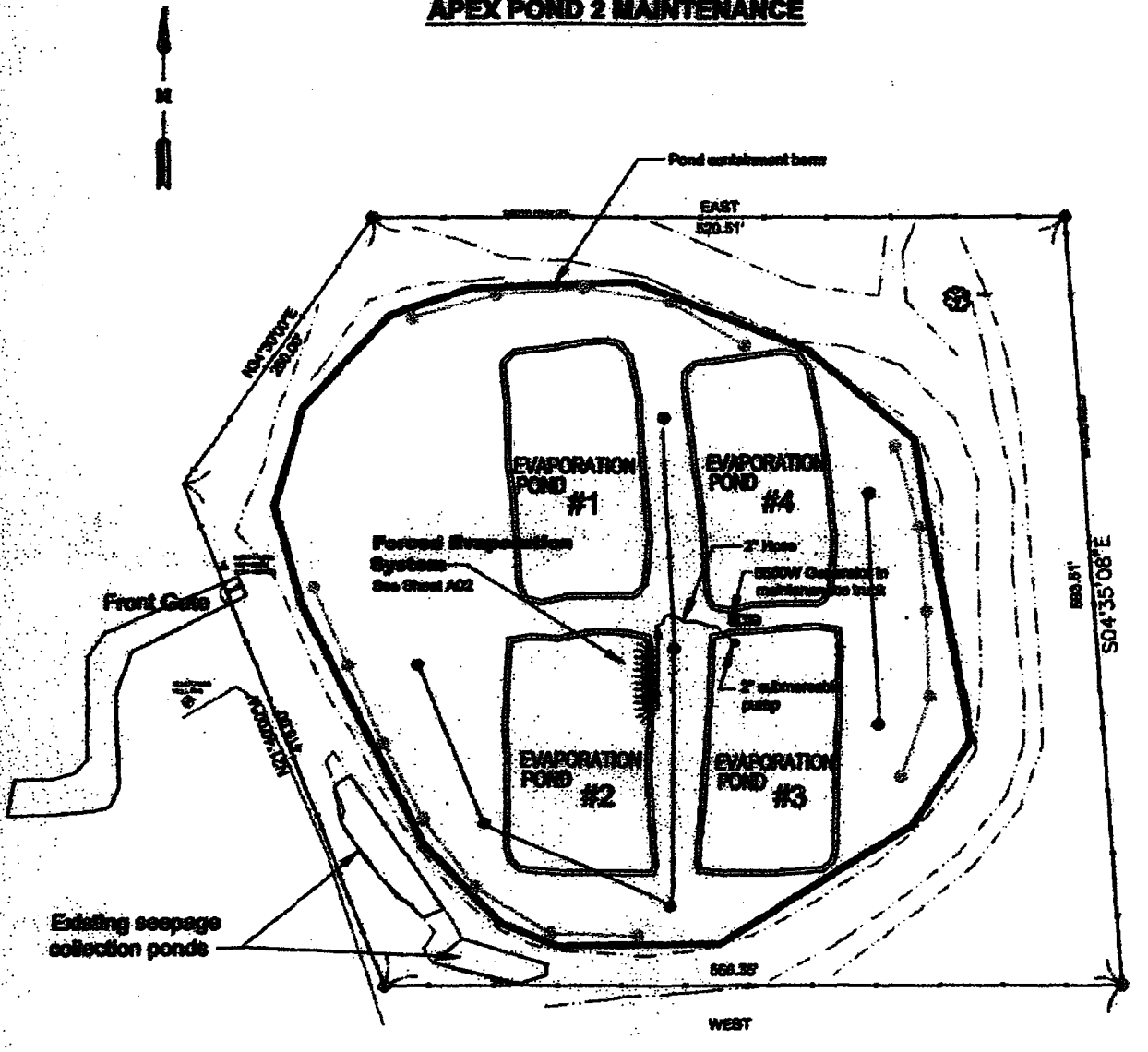
The Forced Evaporation System is located on the Northeast corner of Evaporation Pond # 2 facing West with the spray directed into the pond liquid. The system will be operating under the following conditions:

- When wind gusts are below 12 MPH.
- When a maintenance person or persons are on site. The system will not be in operation when not attended.
- When clear and sunny conditions exist in the area.
- System maintenance is required to insure proper atomization. The spray nozzles must be removed for cleaning and put back in service at intervals to be determined.
- All materials used in the system, except the hose, pump and generator, will be buried in Apex Pond 2 upon decommissioning the system.

Note:

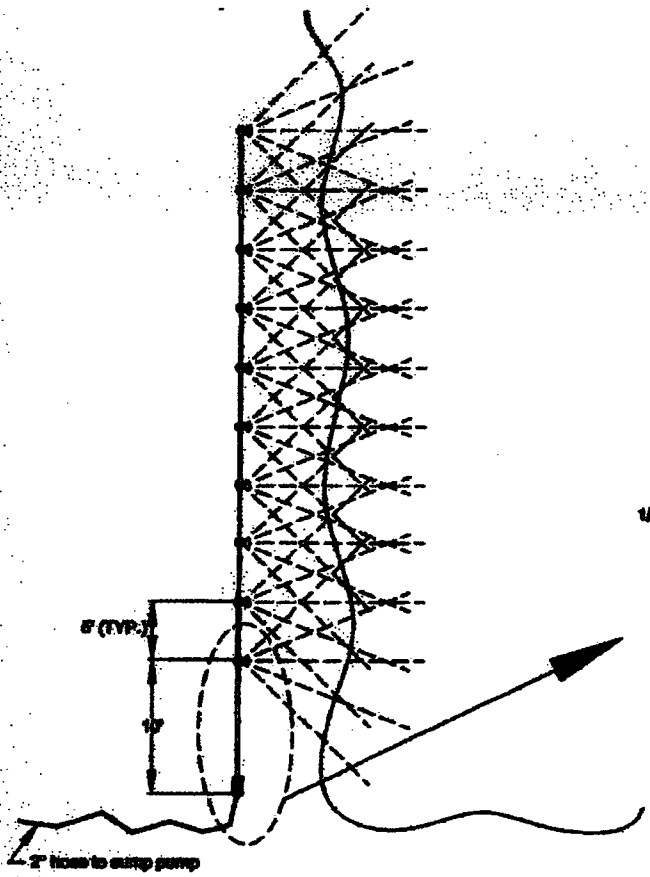
This system is a prototype. It may be modified or expanded to suit site conditions.

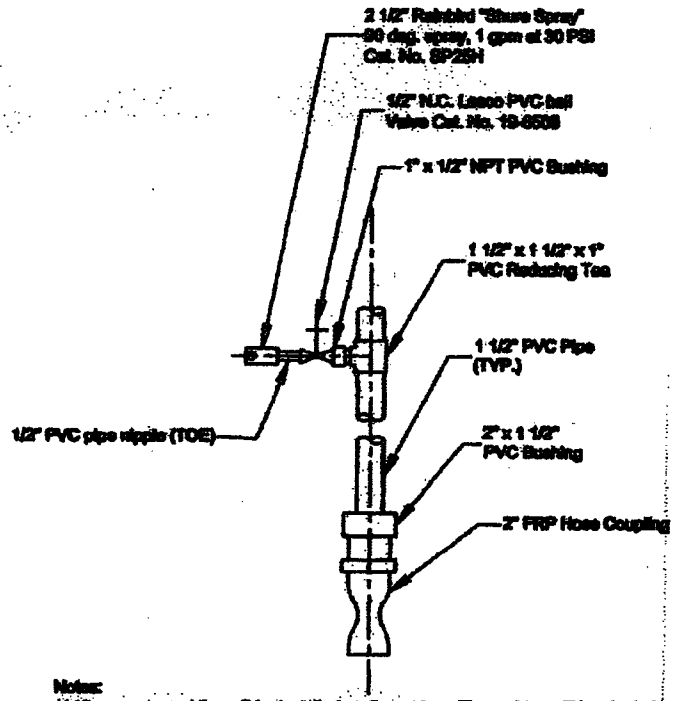
PHASE IIB: PLAN VIEW OF EVAPORATION PONDS AND FORCED EVAPORATION SYSTEM
APEX POND 2 MAINTENANCE



NOT TO SCALE

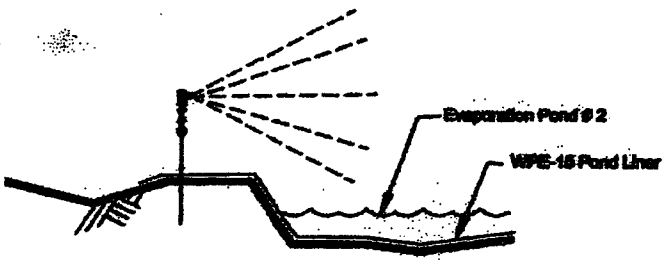
phaseIIB03.dwg
Sheet A01





Notes:
1/ 10 spray assemblies will be installed on the system. The end tee will be nipplled and capped.
2/ The Forced Evaporation System is to be supported with PVC landscaping stakes on 10' centers. The stakes will be attached to the 1 1/2" PVC Pipe manifold.
3/ For equipment specifications and operating data, see the Forced Evaporation Operation Instructions.

FORCED EVAPORATION SYSTEM INSTALLATION
PLAN VIEW



FORCED EVAPORATION SYSTEM INSTALLATION
SECTIONAL ELEVATION PERPENDICULAR TO POND

NOT TO SCALE

phaseIIB03.dwg
Sheet A02

U89828
03-30

MONSTER ENGINEERING INC
ENGINEERING . DESIGN . MANAGEMENT

3031 banner spring ranch road
laporte, colorado 80535
(970) 221.7777
fax (970) 224.0161
email monster@peakpeak.com

MEMORANDUM

TO: Chris Gypton (Hecla Mining Company)
FROM: Doug Gibbs (Monster Engineering Inc.)
DATE: 3/8/05
SUBJECT: **Preliminary Assessment of Gas Collection and Sampling - Apex Site**

MEI has completed its review and analysis of all supplied data and information concerning an unknown gas which had emanated from the temporary cover materials and was trapped beneath temporary liner materials at the Apex Site. The gas was noted in late 2004 / early 2005 during excavation and construction of temporary evaporation ponds on the top surface of Pond 2.

Based on a thorough review of all field and laboratory data, and pertinent EPA design guidance documents concerning both hazardous and non-hazardous landfill cover design and construction, MEI concludes that the gas produced was almost exclusively carbon dioxide, and that its production was temporary, very limited in scope, and will not impact the current final cover design. Therefore, no changes or additions will be required to the current final cover design (no gas collection and vent system will be required).

Background
The primary reason for this preliminary assessment was to determine if in general constituents in the unknown gas created and collected at the site in January of 2005 could potentially create conditions where that gas under the final low permeability geosynthetic clay liner (GCL) could cause any future problems with the final cover design detailed in the Final Closure Plan's cover system for Pond 2 (MEI 2004). The assessment also reviewed the requirements for and potential need for a gas collection layer and vent system to insure future cover system integrity.

Temporary Evaporation Pond Construction and Gas Generation
The fall and winter of 2004 / 2005 at the Apex Site was extremely wet. In order to manage excess surface water, Hecla initiated a construction program to install temporary evaporation ponds on top of Pond 2. These ponds were designed to prevent infiltration of surface water into the temporary cover materials and help control and evaporate excess rain and snow. Construction consisted of excavating four 100 foot by 200 foot ponds approximately three feet deep into the existing temporary cover materials. Each pond was lined with a temporary synthetic liner. After installation of the first liner in Temporary Pond #4 (NE corner of Pond 2), and after fluids were pumped into that pond, gas was noted collecting beneath the temporary synthetic liner. The gas caused the liner to rise and form large inflated areas dubbed "whale backs".

Gas Sampling and Analyses Results
Hecla requested that Gila Management collect two separate gas samples from underneath the temporary evaporation pond liner. Sampling was completed on January 7, 2005, and sample testing was completed by Data Chem Laboratories on January 11, 2005. JBR Environmental

Consultants (JBR 2005) analyzed the sample results and reported the following to Hecla:

- samples could only be analyzed at a 1:10 dilution rate due to large amounts of carbon dioxide
- the majority of gas in both samples was composed of carbon dioxide
- total C12 (petroleum) hydrocarbons were 4.83 parts per million (ppm)
- total C11 hydrocarbons and chloromethane were 1.39 ppm
- sulfur based constituents were below detection limits except carbonyl sulfide which was detected at 0.055 ppm
- carbon dioxide gas generation was most likely caused by the combination of recent rain events and mixing of unprocessed ore and limestone with acidic fluids during temporary pond construction
- even with a conservative 300 percent deviation in results for petroleum gases, it is unlikely that gases generated posed an explosion, fire hazard, or are immediately dangerous to life or health
- the most likely hazard from the gases is the presence of carbon dioxide, thus indicating the lack of oxygen

Gas Management System Information

According to EPA documentation (EPA 1989a and 1989b), a gas vent layer is an optional layer in a multi-layered cap for a disposal facility. This layer's function is to intercept and control combustible gases released from buried wastes. Waste facilities that are most likely to require a gas vent layer are co-disposal facilities that contain significant organic waste material such as that found in municipal waste. Organic wastes decompose, depending on site specific conditions, and may cause methane. Landfills that do not contain significant quantities of organic materials normally produce minimal gases. Facilities containing carbon dioxide gas ar not required to have a gas collection and venting system.

Gases produced during the decomposition of wastes within typical landfills containing organics are 50% methane, 40% carbon dioxide, and 10% other gases (EPA 1991). If methane is going to be produced in a landfill it will usually start to occur after the first year. Highest gas production rates occur when waste moisture contents are higher than 60% of saturation (anaerobic conditions).

The following factors, associated with Pond 2 and construction of the temporary evaporation ponds, make methane gas production highly unlikely and carbon dioxide gas production likely:

- vast majority of buried waste materials were inorganic (ore, rock, mineral processing byproducts)
- very limited organic matters are present (no organics = no methane)
- waste materials have been in place for many years (if methane was going to be produced it should have shown up by now)
- wastes are generally 100% saturated (if methane was going to be produced it has had optimal anaerobic conditions)
- acidic fluids and carbonaceous limestone rock were available in abundance to produce carbon dioxide (all it needed was some vigorous mixing)

Another factor pointing towards carbon dioxide gas production was that the gas samples were collected from the upper portion of the bubble, and as carbon dioxide is heavier than air and methane, it should not have been in the upper portion of the bubble had there been any other gas inside the bubble.

Because carbon dioxide is heavier than air it will move downward in a disposal facility (EPA 1989). What most likely happened after temporary evaporation pond excavation and lining activities were completed was that carbon dioxide was still being generated along the sideslopes of the new temporary ponds. The gas was able to migrate down the sideslopes and collect underneath the new liner, forming the "whale backs" which were noted after fluids were pumped into the ponds.

Summary

MEI has determined that the gas produced at the site was almost exclusively carbon dioxide based on a thorough review and analyses of all site specific data and laboratory test results. MEI has also determined that carbon dioxide gas generation will not impact the current final cover design and will not require a change by addition of a gas control layer and ventilation system based on a thorough review of EPA design documentation concerning the requirement for and design of gas collection and venting systems for multi-layered caps. Gas production was most likely very temporary, limited in scope, and associated with a combination of heavy precipitation events and construction of temporary evaporation ponds. Even in the unlikely event that gas generation continues until after completion of the final cover system, carbon dioxide is heavier than air and therefore will not rise up to put pressure on the GCL.

References

MEI 2004. Monster Engineering Inc., Apex Site - Final Engineering Report for Pond 2 Closure, prepared for Hecla Mining Company, March 25, 2004.

JBR 2005. JBR Environmental Consultants, Inc., Air Sampling and Analysis Letter Report, prepared for Chris Gypton, Hecla Mining Company, January 26, 2005.

EPA 1989a. Final Covers on Hazardous Waste Landfills and Surface Impoundments, Office of Solid Waste and Emergency Response, Washington DC, EPA/530-SW-89-047, July 1989.

EPA 1989b. Requirements for Hazardous Waste Landfill Design, Construction, and Closure, *Seminar Publication*, Center for Environmental Research Information, Cincinnati, OH, EPA/625/4-89/022.

EPA 1991. Design and Construction of RCRA/CERCLA Final Covers, *Seminar Publication*, Office of Research and Development, Cincinnati, OH, EPA/625/4-91/025.